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thought of the original author. All must join in the fond hope that he may long remain with us in health and strength to complete what he has so ably begun. It is a work that must remain a credit, not only to Botany, but to American science forever.—W. W. BAILEY.

DISTINCTION BETWEEN MONOCOTYLEDONS AND DICOTYLEDONS.—Flahault has shown a beautiful distinction between Monocotyledons and Dicotyledons that any botanist with a moderately good glass can demonstrate for himself. A thin longitudinal section through the young root tip shows that in monocotyledons the root cap seems to be an independent thing, fitting on like a calyptra, while in dicotyledons there is no such distinction, but a perfect blending of tissues. In the former case the root-cap is renewed from its own inner row of meristem, while in the latter it is renewed directly from the *punctum vegetationis*.—J. M. C.

NOTICE.—I would give notice that my address after September 1st will be changed from Hanover to Wabash College, Crawfordsville, Ind. Hence any communications to me of any kind in regard to the GAZETTE should be addressed to that place after the date mentioned above.—JOHN M. COULTER.

AN INTERESTING DEMONSTRATION.—Many plants contain raphides, crystals of oxalate of lime, etc., but cystoliths are of rarer occurrence, although abundant in certain plants, notably in those belonging to the Urticaceæ. A very interesting experiment and one that almost any one possessing a microscope of even ordinary power, say 200 or 300 diameters, may perform for himself is as follows: Take a leaf of *Ficus Indica*, *elastica* or *Mora*. *Morus rubra* or almost any of the Artocarpeæ and make a section of moderate thinness. If too thin the cystoliths will be broken and pulled out by the razor. Under the glass will be seen a beautiful arrangement. Certain cells of the epidermis or of the surrounding tissue are enlarged and specialized and from their top the mass usually hangs upon a short stalk. In *Ficus elastica* the cystoliths consist of an amorphous mass of cellulose studded with crystalline points of carbonate of lime, the whole being in somewhat the form of a very thick bunch of grapes. If now we place a drop or two of acetic acid at the edge of the cover-glass and allow it to creep under while we keep our eye upon the object the result will easily prove the composition of the crystals. Quite a furious effervescence takes place and soon nothing is left but the amorphous cellulose. Upon jarring the table slightly this will be seen to shake and tremble like a bowl of gelatine jelly. This little experiment is easily tried and may be new to some.—C. R. B.

Reports upon the Botanical Collections Made in Portions of Nevada, Utah, California, Colorado, New Mexico and Arizona, during the years 1871-75. By J. T. Rothrock.—This forms the sixth volume of the Final Reports of the Wheeler Survey and is a work of over 400 pages, containing 30 plates drawn by Isaac Sprague and W. H. Seaman. There are four chapters and an Appendix. Chapter first contains some general notes on Colorado, such as the flora of the open ground, the flora of the mountains, timber and agricultural resources. Chapter second contains notes of the same general nature upon New Mexico, including also some of Arizona. Chapter third contains notes on the Economic Botany of the region included in the report. In this about 35 species are enumerated as being either already in use or worthy of use. Chapter fourth, containing the bulk of the volume, is devoted to the catalogue. In this we have work credited to ten botanists besides Dr. Rothrock himself. To Sereno Watson were entrusted the *Leguminosæ*; to Dr. Englemann the *Cacteæ*, *Asclepiadaceæ*, *Gentianeæ*, *Cuscuteæ*, *Euphorbiaceæ*, *Cupuliferæ*, *Loranthaceæ*, *Coniferæ*, *Amaryllideæ* and *Junceæ;* to Prof. Porter, the *Polemoniaceæ*, *Borragniaceæ*, *Scrophulariaceæ*, *Labiatæ* and *Polygonaceæ;* to M. S. Bebb, the *Salicaceæ;* to Wm. Boott, the genus *Carex;* to Dr. Vasey, the *Gramineæ;* to Prof. Eaton, the *Filices* and *Ophioglossaceæ;* to Thos. P. James, the *Musci;* to Prof. Tuckerman, the *Lichenes;* and to C. F. Austin, the *Hepaticæ*. Credit to whom credit is due is a maxim that has been closely followed in this volume and we are never at a loss to know just whose work we are examining. It is a pity that the scope of the volume had not been extended enough to include all the collections ever made in the region embraced in the report. It would then have been complete as far as it went, and filled another gap in our scattered flora. The Ferns are more elaborately reported upon than any other order, for we have a full report not only of those collected by the Wheeler Surveys, but of all Ferns hitherto discovered in the regions lying west of 105 degrees west longitude and south of 40 degrees north latitude. As many of these ferns are described in works inaccessible to the ordinary botanist, descriptions are given of all not found in Gray's Manual. All this is a very grand thing in itself and botanists will rejoice in having so complete a work upon the ferns of that curious and immense region, but it strikes one as being out of proportion with the rest of the work.